



Irrigation Water Quality Sampling Quick Reference

Why Sample?

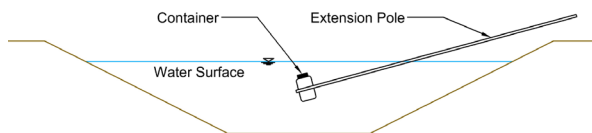
- Suitability of water for irrigation depends on the chemical and biological quality of the water.
- Some water requires treatment or special management for irrigation use.
- Testing water begins with proper water sampling.

What to Sample/Test

What?	Why?	How Often?
Electrical conductivity (EC)	Total salinity	
Sodium adsorption ratio (SAR)	Avoid soil infiltration problems	Early and late during the irrigation season prior to initial development, regularly afterward if initial testing reveals a problem or a specific concern arises
Boron	Common plant toxicity	
Elemental Analysis (metals)	Potential plant toxicities	
Hardness and pH	Irrigation equipment scaling/corrosion	
Nutrients (nitrate, sulfur, phosphorus)	Account for in Nutrient Management Plan	Early and late during the irrigation season prior to developing a new source, regularly afterward if nutrient concentrations are high enough to change fertility management
Pathogens (E. coli)	Food (produce) safety	As required under the Food Safety Modernization Act
Pollutants (hydrocarbons)	Plant toxicity and food safety	If there is specific concern (stormwater entering field, etc.)

Where/How to Sample

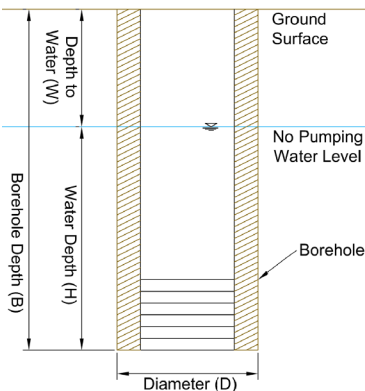
- From a stream or canal near turnout to field, sample near midstream in upper portion of flow



- From sprinkler or tap near field
- From a well:
Sample after at least three times the volume of the well's borehole of water has been removed by pumping:

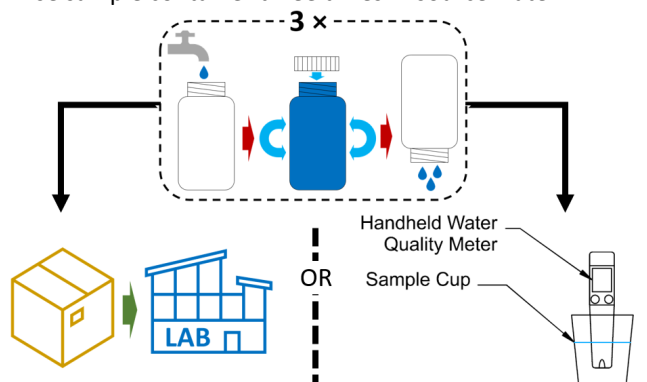
$$t = \frac{0.041 \times (B - W) \times D^2}{Q}$$

(t is time in minutes, B & W in feet, D in inches, Q in gallons per minute)



How to Sample/Test

Rinse sample container three times in source water



Send promptly to lab

- USU Analytical Lab: usual.usu.edu
- Utah Department of Environmental Quality [list of Certified Laboratories](#)

OR

Test EC and/or pH with a handheld water quality meter. Regularly check the meter against EC and/or pH standards.

Find the full guide at: extension.usu.edu/irrigation/research/irrigation-water-quality-sampling-guide